What is claimed is:

1. A method for determining an absolute value of concentrations of chromophores in a physiological medium, comprising:

a probe irradiating the physiological medium with electromagnetic waves at a first wavelength;

the probe irradiating said physiological medium with electromagnetic waves at a second wavelength, the first wavelength being different than the second wavelength;

the probe detecting the electromagnetic waves transmitted through the physiological medium; and

calculating an absolute value of concentrations of chromophores from the detected electromagnetic waves.

2. The method according to claim 1, wherein a plurality of probes perform the irradiating and detecting steps at a plurality of locations on the physiological medium.

3. The method according to claim 2, further comprising calibrating the plurality of probes according to the absolute value of concentrations of chromophores that are calculated.

4. The method according to claim 2, further comprising generating regional information of the absolute value of concentrations of chromophores at the plurality of locations on the physiological medium.

5. The method according to claim 1, further comprising monitoring changes in the absolute value of concentrations of chromophores over time.

6. A method according to claim 1, wherein the physiological medium is tissue affected by surgery.

7. A method according to claim 6, further comprising calculating a viability of the tissue according to the an absolute value of concentrations of chromophores.

8. An optical system for determining an absolute value of at least one of concentrations of chromophores included in a physiological medium, comprising:

a plurality of probes, each probe comprising a source to irradiate into the medium at least two sets of electromagnetic waves having different wave characteristics and a detector to detect electromagnetic waves transmitted through the medium; and

a processing module, coupled to the plurality of probes, to determine the absolute value of at least one of the concentrations and the ratios thereof from a plurality of wave equations.

9. The optical system according to claim 8, wherein the chromophores are hemoglobins including oxygenated hemoglobin and deoxygenated hemoglobin.

10. The optical system according to claim 8, wherein the physiological medium is tissue affected by surgery.

11. The optical system according to claim 8, wherein the processing module includes an algorithm configured to determine the absolute value based on an intensity of electromagnetic waves irradiated by the source, an intensity of electromagnetic waves detected by the detector, and at least one parameter accounting for an optical interaction between electromagnetic waves and the medium.

12. The optical system according to claim 11, wherein the wave equations include at least one term substantially dependent on at least one of optical properties of the medium and configuration of the source and detector, and the algorithm including at least one correlation expressing a first function of the term as a second function of at least one of the concentrations and the ratios thereof.

13. The optical system according to claim 12, wherein the second function is a polynomial of at least one of the concentrations and the ratios thereof.

14. The optical system according to claim 11, wherein the wave equations include at least one term substantially dependent on at least one of optical properties of the medium and configuration of the source and detector, and wherein the algorithm approximates a function of the term as a constant.

15. The optical system according to claim 8, wherein the wave equation is expressed as: $I = \alpha \beta \gamma I_o \exp \{-B L \delta \Sigma_i (\varepsilon_i C_i) + \sigma\}$, wherein I_o is a variable for an intensity of electromagnetic waves irradiated by the source, I is a variable for an intensity of electromagnetic waves detected by the detector, α is a parameter associated with at least one of the source and medium, β is a parameter associated with at least one of the detector and medium, γ is one of a proportionality constant and a parameter associated with at least one of the source, detector, and medium, B is a parameter accounting for a length of an optical path of electromagnetic waves through the medium and associated with at least one of the source, detector, and medium, L is a parameter accounting for a distance between the source and the detector, δ is one of a proportionality constant and a parameter associated with at least one of the source, detector, and medium, ε_i is a parameter accounting for an optical interaction between electromagnetic waves and an i-th chromophore in the medium, C_i is a variable denoting concentration of the i-th chromophore, and σ is one of a proportionality constant and a parameter associated with at least one of the source, detector, and medium.

16. An optical system according to claim 16, wherein the parameter B is a path length factor.

17. An optical system according to claim 16, wherein the parameter ε_i is at least one of a medium extinction coefficient, medium absorption coefficient, and medium scattering coefficient.